

1. An isolated nucleic acid molecule encoding a lipoprotein or a biologically active fragment of said lipoprotein that mediates adhesion of Neisseria cells to human cells from a bacteria of the genus Neisseria, selected from the group consisting of

(a) a nucleic acid molecule comprising a nucleotide sequence encoding a protein comprising SEQ ID NO: 4;

(b) a nucleic acid molecule comprising a nucleotide sequence having 95% sequence identity to a nucleotide sequence encoding a protein comprising SEQ ID NO:4 due to the degeneracy of the genetic code;

(c) a nucleic acid molecule comprising a nucleotide sequence that hybridizes under stringent hybridization conditions of 0.2 X SSC, 0.1% SDS and 68°C to

(i) the complement of a nucleotide sequence encoding a protein comprising SEQ ID NO:4,

(ii) the complement of a nucleotide sequence which is 95% identical to a nucleotide sequence encoding a protein comprising SEQ ID NO:4.

2. The nucleic acid molecule according to claim 1, wherein the nucleic acid molecule originates from a pathogenic Neisseria species.

3. The nucleic acid molecule according to claim 2, wherein the *Neisseria* species is *Neisseria gonorrhoeae* or *Neisseria meningitidis*.

4. The nucleic acid molecule according to claim 1, wherein the lipoprotein or biologically active fragment of said lipoprotein has the ability to adhere to human cells.

5. A vector comprising the nucleic acid molecule according to claim 1.

6. The vector according to claim 5, wherein the nucleic acid molecule is operatively linked to at least one regulatory DNA element allowing the expression of said nucleic acid molecule in a prokaryotic or an eukaryotic cell.

7. A host cell comprising a vector according to claim 5.

8. A host cell comprising the nucleic acid molecule according to claim 1.

9. An isolated nucleic acid molecule having a length of at least 12 nucleotides specifically hybridizing under

stringent hybridization conditions of 0.2 X SSC, 0.1% SDS and 68°C to a nucleic acid molecule according to claim 1.